Amendments to the Specification:

Please replace the paragraph beginning on page 6, line 5 with the following amended paragraph:

Still another object of the present invention is to provide a method for producing a high resolution image of a radiation source located in a patient. A feature of the invention is the use of high purity and high quality diffracting crystals 1 mm wide or less. An advantage of the invention is the imaging of ~~millimiter~~ millimeter size sources into images of comparable size. Another advantage of the invention is the obviation of unnecessary, invasive surgical procedures to locate a tumor.

Please replace the paragraph beginning on page 12, line 18 with the following amended paragraph

Generally, the detector array 19 comprises solid state detectors made of silicon or germanium or a composite material such as CdTe. These detectors are mounted in movable housing 25 (See FIG.3). When radiation is absorbed by these detectors, positive and negative charges are generated that can be collected and measured with suitable electronics. These detectors have much better energy resolution and thus lower background counting rates than scintillation detectors. Thus these detectors allow one to detect weaker sources. These detectors are, however, much more expensive than sodium iodide crystals, zinc sulfide crystals, anthracene, or some other substance (or combination of substances) that scintillates when contacted with ionizing radiation. Also comprising each scintillation detector is a photomultiplier tube to monitor the scintillations as they occur.

Please replace the paragraph beginning on page 15, line 18 with the following amended paragraph:

FIG. 5b shows that for Bragg diffraction the acceptance angle can be increased if the crystal is curved in the direction of the radiation beam. Rays coming at

different angles 139 will still find planes 140 for which the Bragg condition will be obeyed. The angle ~~141~~ 41 between the rays 135 with the lowest angle *p* and the rays 139 with the largest *p* is the acceptance angle. The curved shape of the crystals produces a significant focusing effect. The highest degree of focusing for Bragg diffraction occurs when the radius of curvature is equal to L / sin *p*, where L is the distance from the source to the lens. Furthermore, a mosaic structure in the crystal produces an increase in the acceptance angle in the same manner as described above for Laue diffraction.

Please replace the paragraph beginning on page 19, line 15 with the following amended paragraph:

Referring to FIG. 8a, ILL typically provides cylindrical copper crystals 51 of 10 cm. in diameter and 25 cm. long, with a predetermined crystal orientation. Thin slabs 53, of 1 mm thickness 55 or less, are cut parallel to the planes 57_designated by the Miller indices that have been selected. As shown in FIG. 8b, the slabs 53 are then cut in turn into crystals 42 with faces 59 approximately 1mm or less wide. The faces 59 are perpendicular to the planes 57. If the source is small, it is critical that the faces 59 be at least as small. Experiments have shown that If the crystals are bigger than the source, the image is about 1.6 times the size of the crystals. In the '841 patent embodiment 4mm square faces where used yielding a 7mm image of the source.

(On line 17 a space is inserted between "57" and "designated")

Please replace the paragraph beginning on page 22, line 16 with the following amended paragraph:

FIG. ~~11~~ 12 is a three dimensional view of a Bragg lens. The Bragg crystals 42 are mounted on the concave surfaces of a plurality of coaxial cylindrical supports 159. FIG. ~~12~~ 13 is a cross-sectional view of FIG. ~~11~~ 12 along lines 12--12, and FIG. ~~13~~ 14 is a detailed view of FIG. ~~12~~ 13. FIG. ~~13~~ 14 depicts how the crystals 42 are mounted on the supports 159. Said supports 159 are in turn mounted in a

substrate 43 containing apertures 125 arranged as concentric rings 45. As can be seen in FIG. ~~13~~ 14, the apertures 125 corresponding to each ring 45 are much wider than the crystal thickness 150 in order to allow the radiation beam 153 to impact upon all of the crystal face 156. The supports 159 that are provided for the bent crystals are shaped so that the radius of the support surface 162 matches that of the bent crystal. One such support can be a machined surface integrally molded, or removably attached to the substrate 43.

Please replace the paragraph beginning on page 24, line 17 with the following amended paragraph:

Restricting the area of the apertures in front of the detector array and in front of the source improves significantly the spatial resolution of the device. As shown in FIGs. ~~14a~~ 15a and ~~14b~~15b, a decrease in the detector array aperture 140 reduces the field of view, i.e. the area ~~156~~ 196 of the source 15 that can be viewed at any one time. Where the angular width of the mosaic structure is small compared to the angular width of the detector aperture, the smaller the detector aperture, the smaller the apparent size of the source. In a series of observations, the inventor has shown that a 3mm detector aperture produces a 3mm FWHM image of a 1mm source. This restriction of the detector aperture also reduces the background seen by the detector array. Restriction of the source aperture 142 has a similar advantage in reducing the apparent size of the source and in reducing the background radiation reaching the detector array. FIG. 16 illustrates the combined effect of narrow apertures in front of the detector array and in front of the source.